LISTING OF THE CLAIMS

Claim 1 (Previously Presented): A process for controlled radical homopolymerisation, in an aqueous solution, of acrylic acid and its salts, or of copolymerisation, in aqueous solution, of acrylic acid with one or more hydrosoluble monomers, wherein said process is in batch or semi-batch mode, and wherein said process comprises two stages, the first of which is synthesizing "in situ" an hydrosoluble transfer agent used in the second stage of polymerisation.

Claim 2 (Previously Presented): The process according to the claim 1, wherein the reactive media of the first stage of synthesis of the transfer agent and of the second stage of polymerisation are identical and solely water.

Claim 3 (Previously Presented): The process according to claim 1, wherein said process is a process of controlled radical homopolymerisation, in an aqueous solution, of acrylic acid, and is undertaken in batch mode.

Claim 4 (Previously Presented): The process according to claim 1, wherein the hydrosoluble transfer agent is an α-substitute β-carboxylate xanthate salt.

Claim 5 (Previously Presented): The process according to claim 1, wherein, in the second stage of polymerization, the limits of quantity of transfer agent are determined, such that the molar ratio of transfer agent to monomer is between 0.001% and 20%, and the mass ratio of transfer agent to monomer is between 0.01% and 60%.

Claim 6 (Previously Presented): The process according to claim 1, wherein said process consists in putting in contact in the first stage:

- a potassium xanthate,
- 2-bromopropionic acid sodium salt,
- water,

and then in adding, in the second stage, acrylic acid and at least one hydrosoluble initiator of free radicals.

Claim 7 (Previously Presented): The process according to claim 1, wherein the first stage is undertaken with equimolar quantities of potassium xanthate and the sodium salt of 2-bromopropionic acid.

Claim 8 (Previously Presented): The process according to claim 1, wherein the hydrosoluble copolymerised monomers are selected from the group consisting of methacrylic acid, itaconic acid, maleic acid, 2-acrylamido-2-methyl-1-propane sulphonic acid in acid form or partially neutralised, 2-methacrylamido-2-methyl-1-propane sulphonic acid in acid form or partially neutralised, 3-methacrylamido-2-hydroxy-1-propane sulphonic acid in acid form or partially neutralised, allylsulphonic acid, methallylsulphonic acid, allyloxybenzene sulphonic acid, methallyloxybenzene sulphonic acid, 2-hydroxy-3-(2-propenyloxy)propane sulphonic acid, 2-methyl-2-propene-1-sulphonic acid, ethylene sulphonic acid, propene sulphonic acid, 2-methyl sulphonic acid, styrene sulphonic acid, as well as all their salts, vinyl sulphonic acid, sodium methallylsulfonate, sulfopropyl acrylate or methacrylate, sulfomethylacrylamide, sulfomethylmethacrylamide, acrylamide, methylacrylamide, n-methylolacrylamide, n-acryloylmorpholine, ethylene glycol methacrylate, ethylene glycol acrylate, propylene glycol methacrylate, propylene glycol acrylate, propene phosphonic acid,

ethylene or propylene glycol acrylate or methacrylate phosphate, vinylpyrrolidone, methacrylamido propyl trimethyl ammonium chloride or sulphate, trimethyl ammonium ethyl chloride or sulphate methacrylate, as well as their acrylate or acrylamide counterparts, whether quaternised or not, ammonium dimethyldiallylchloride, and mixtures thereof.

Claims 9-24 (Canceled):